

1. ENVIRONMENTAL TRENDS

Wastewater treatment

Water quality (physical, chemical, microbial, biological) is affected by water abstraction, by pollution loads from human activities (agriculture, industry, households) and by climate and weather.

If pressure from human activities becomes so intense that water quality is impaired to the point that it requires ever more advanced and costly treatment, or that aquatic plant and animal species in rivers and lakes are greatly reduced, then the sustainability of water resource use is in question.

Definitions

The indicator presented here refers to sewage treatment connection rates, i.e. the percentage of the national population connected to a wastewater treatment plant. Sewerage connection rates are shown as complementary information.

“Connected” means actually connected to a wastewater treatment plant through a public sewage network. It does not take into account independent private facilities (e.g. septic tanks), used where public systems are not economic.

The data show total connection rates and the extent of secondary and/or tertiary sewage treatment to provide an indication of efforts to reduce pollution loads:

- Primary treatment: physical and/or chemical process involving settlement of suspended solids, or other process in which the BOD₅ of the incoming wastewater is reduced by at least 20% before discharge and the total suspended solids are reduced by at least 50%.
- Secondary treatment: process generally involving biological treatment with a secondary settlement or other process, with a BOD removal of at least 70% and a COD removal of at least 75%.
- Tertiary treatment: treatment of nitrogen and/or phosphorous and/or any other pollutant affecting the quality or a specific use of water (microbiological pollution, colour, etc.).

This indicator should be read in connection with information on public wastewater treatment expenditure. It should be related to an optimal national connection rate, recognising that the optimal connection rate is not necessarily 100%: it may vary among countries and depends on geographical features and on the spatial distribution of habitats.

Overview

In recent decades, OECD countries have been progressing with basic domestic water pollution abatement and with sewerage and wastewater treatment infrastructure:

- The share of the population connected to a municipal wastewater treatment plant rose from about 50% in the early 1980s to about 60% in the early 1990s and has reached almost 80% today.
- Due to varying settlement patterns, economic and environmental conditions, starting dates and the rate at which the work was done, the share of population connected to wastewater treatment plants and the level of treatment vary significantly among OECD countries: secondary and tertiary treatment have progressed in some while primary treatment remains important in others.
- OECD countries with relatively low GDP per capita are still in the phase of infrastructure development, which can command investment of the order of 1% of GDP (OECD, 2012b).
- A number of OECD countries established their water infrastructure decades ago and now face the challenge of upgrading ageing networks. Some countries have reached the economic limit in terms of sewerage connection and must find other ways of serving small, isolated settlements.

Comparability

Data on the share of the population connected to wastewater treatment plants are available for almost all OECD countries. In some countries, data relate to population equivalent and are thus not fully comparable. Information on the level of treatment and on treatment charges remains partial.

Data on the population “connected to a sewerage network without treatment” and “not connected to a sewerage network” contain estimates for Belgium, Chile, Hungary, Ireland, Poland, Portugal and the United States.

For additional notes, see Annex B.

Source

OECD Environment Statistics (database), <http://dx.doi.org/10.1787/data-00604-en>.

Further information

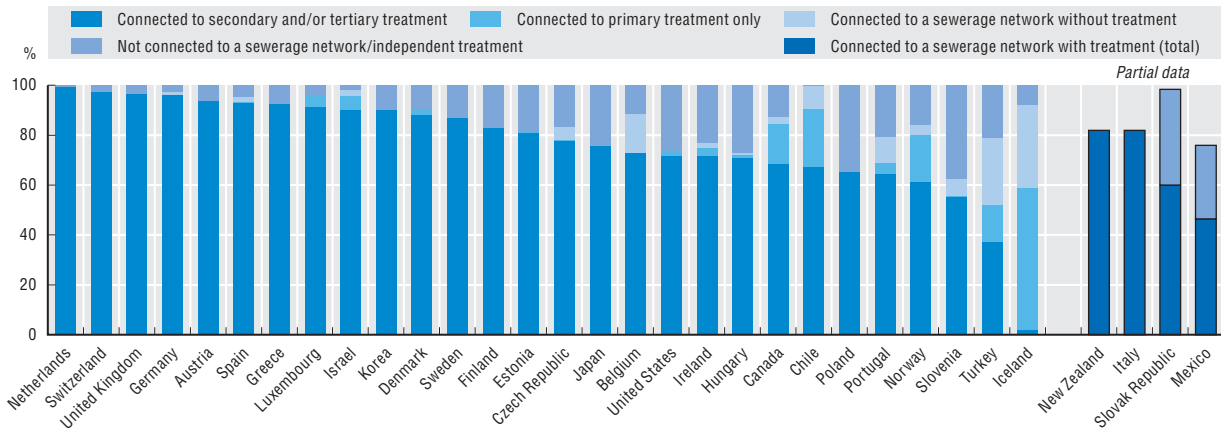
OECD (2014), *Water and Green Growth*, OECD Green Growth Studies, OECD Publishing, Paris, forthcoming.

OECD (2012a), *OECD Environmental Outlook to 2050: The Consequences of Inaction*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264122246-en>.

OECD (2012b), “Review of the OECD Environmental Strategy for the First Decade of the 21st Century”, OECD, Paris, www.oecd.org/env/50032165.pdf.

Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

Figure 1.20. **Sewage treatment connection rates, latest available year**
 % of national population connected to a wastewater treatment plant



Source: OECD Environment Statistics (database).

StatLink <http://dx.doi.org/10.1787/888932977011>

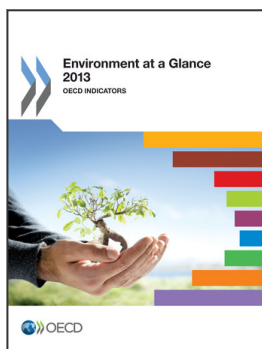
Table 1.7. **Sewage treatment connection rates, % of population**

	Sewage treatment connection rates					Sewerage network connection rates	
	Early 1990s			2011 or latest			2009 or latest
	Total	of which:		Total	of which:		Total
		Secondary treatment	Tertiary treatment		Secondary treatment	Tertiary treatment	
Australia	..	..	..	..	..	..
Austria	72	60	7	94	1	93	94
Belgium	29	6	36	73	9	63	88
Canada	62	21	27	84	53	15	87
Chile ¹	72	2	8	91	4	63	96
Czech Republic	50	15	55	78	8	70	83
Denmark	85	42	29	90	2	86	90
Estonia	69	31	29	82	13	68	82
Finland ¹	76	0	76	83	0	83	83
France	69	51	27	..	..	..	..
Germany	88	32	49	96	3	93	97
Greece	11	11	0	92	6	86	92
Hungary	20	14	1	72	34	37	73
Iceland	2	0	0	59	1	1	92
Ireland	44	21	0	75	60	11	77
Israel	77	32	28	96	40	50	98
Italy ¹	63	36	24	82	..	..	..
Japan	44	42	2	76	55	20	76
Korea ¹	33	37	1	90	36	54	90
Luxembourg	90	67	8	96	62	29	96
Mexico ¹	22	19	0	47	..	..	71
Netherlands	94	84	8	99	1	98	99
New Zealand	80	33	40	82	..	..	..
Norway	57	1	43	80	2	60	84
Poland ¹	34	26	4	66	13	52	66
Portugal ¹	21	11	0	71	46	19	81
Slovak Republic	43	..	..	60	..	..	62
Slovenia	36	15	2	56	37	19	63
Spain ¹	53	38	4	94	33	60	96
Sweden	94	9	85	87	4	83	87
Switzerland	90	28	62	97	20	78	97
Turkey	7	1	0	52	20	18	73
United Kingdom ¹	83	62	13	97	49	47	97
United States	75	33	30	74	32	40	74
OECD¹	59	34	19	76	31	42	81

1. See Annex B for country notes.

Source: OECD Environment Statistics (database).

StatLink <http://dx.doi.org/10.1787/888932978208>



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